TW AF 2123

MacPherson Kwok Chen & Heid LLP

1762 Technology Drive, Suite 226
San Jose, CA 95110
Tel. (408) 392-9250
Fax (408) 392-9262

2402 Michelson Drive, Suite 210
Irvine, CA 92612
Tel. (949) 752-7040
Fax (949) 752-7049

Email: mailbox@ macpherson-kwok.com
www.macpherson-kwok.com

May 24, 2005

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Re:	Applicant(s):	Robert Zeidman	
	Title:	Method for Connecting a Hardware Emulator to a Network	
	Serial No.:	09/751,573	Filed: December 28, 2000
	Examiner:	Craig, Dwin M.	Group Art Unit: 2123
	Docket No.:	M-8637 US	

Dear Sir:

Transmitted herewith are the following documents in the above-identified application:

(1) Return Receipt Postcard;
(2) This Transmittal Letter (1 page in duplicate);
(3) Appeal Brief (27 pages in triplicate).

☒ The fee has been calculated as shown below:

☐	Fee for Request for Extension of Time	$	0.00
☒	Fee for Appeal Brief	$	250.00
	Total additional fee for this Amendment:	$	

☒ Conditional Petition for Extension of Time: If an extension of time is required for timely filing of the enclosed document(s) after all papers filed with this transmittal have been considered, an extension of time is hereby requested.

☒ Please charge our Deposit Account No. 50-2257 in the amount of $ 250.00

☒ Also, charge any additional fees required and credit any overpayment to our Deposit Account No. 50-2257

Total: **$** 250.00

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on May 24, 2005.

Attorney for Applicant(s) — Date of Signature: 5/24/2005

Respectfully submitted,

Edward C. Kwok
Attorney for Applicants
Reg. No. 33,938

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appellant:	Robert Zeidman		
Title:	Method for Connecting a Hardware Emulator to a Network		
Serial No.:	09/751,573	Filing Date:	December 28, 2000
Examiner:	C. Dwin	Group Art Unit:	2123
Docket No.:	M-8637 US		

San Jose, California
May 24, 2005

Mail Stop Appeal Brief - Patents
Commissioner For Patents
P.O. Box 1450
Alexandria, VA 22313-1450

APPEAL BRIEF

Dear Sir:

Pursuant to 37 C.F.R. § 1.192(a), Appellant submits this Appellant Brief in support of the Notice of Appeal filed on May 3, 2005.

Real Party in Interest

Appellant Robert Zeidman is the real party in interest.

Related Appeals and Interferences

There are no other appeals or interferences known to Appellant or Appellant's legal representative that will directly affect or be directly affected by, or have a bearing on the Board's decision in the pending appeal.

Status of Claims

Claims 1-25 are pending. Claim 22 is withdrawn. Claims 1-21 and 23-25 are rejected and appealed.

LAW OFFICES OF
MacPherson, Kwok, Chen & Heid LLP
1762 Technology Drive, Suite 226
San Jose, CA 95110
(408)-392-9520
FAX (408)-392-9262

Status of Amendments

Subsequent to the Final Office Action of January 3, 2005, Appellant filed a Response to Final Office Action (the "Final Office Action") on February 24, 2005. In response, the Examiner issued an Advisory Action (the "Advisory Action"), which was mailed on April 11, 2005.

Summary of Claimed Subject Matter

With respect to Claim 1, the present invention provides a method for connecting an emulated electronic device to a network operating at a specified bit-rate higher than the emulated electronic device (see, e.g., Appellant's Specification at page 4, lines 18-32, and in Figure 1, showing device 30 connecting emulating device 12 to Ethernet 24). The method provides a computer with (a) a network interface, which communicates with a network at a specified bit-rate (see, e.g., Appellant's Specification, at page 4, lines 29-32), (b) an emulation interface, which connects the computer to an emulated electronic device (see, e.g., Appellant's Specification, at page 4, line 32 to page 4, line 2), and a memory (see, e.g., Appellant's Specification, at page 5, lines 2-4). The computer executes a network handling program which: (a) receives data packets from the network through the network interface (see, e.g., Appellant's Specification, at page 6, lines 32-34 and in Figure 6, showing packets received by routine 58 from network interface 74); (b) stores the data packets received from the network in a first buffer in the memory (see, e.g., Appellant's Specification, at page 6, lines 32-34 and in Figure 6, showing storing packets received into shared buffer 128); (c) transmits the data packets in the first buffer to the emulated electronic device through the emulation interface (see, e.g., Appellant's Specification at page 6, lines 34-36 and in Figure 6, showing routine 64 transmitting packets from stored buffer 128 to emulation interface 72); (d)

LAW OFFICES OF
MacPherson, Kwok, Chen & Heid LLP
1762 Technology Drive, Suite 226
San Jose, CA 95110
(408)-392-9520
FAX (408)-392-9262

receives data packets from the emulated electronic device through the emulation interface (see, e.g., Appellant's Specification at page 6, line 37 to page 7, line 2, and in Figure 6, showing routine 66 receiving packets from emulation interface 72); and (e) transmits the data packets received from the emulated electronic device to the network through the network interface (see, e.g., Appellant's Specification at page 7, lines 2-4, and in Figure 6, showing routines 66 and 76 transmitting packets received from emulation interface 72 to network interface 74).

According to Claims 3 and 4, the buffers may each include a receive buffer and a transmit buffer (see, e.g., Appellant's Specification, at page 6, lines 3-21), thus allowing, as recited in Claims 11-12, format changes between data packets communicated to the network and the emulated device.

According to Claim 5, the size of the buffer may be changed dynamically (see, e.g., Appellant's Specification at page 7, lines 12-16), to avoid buffer overflow. Alternatively, as recited in each of Claims 6 and 23-25, data packets may be discarded (see, e.g., Appellant's Specification, at page 7, lines 14-16), as another alternative to handling a buffer overflow condition.

According to each of Claims 7-10, the method keeps a record of the data packets received from the network, the data packets transmitted to the emulated electronic device, the data packets received from the emulated electronic device, and the data packets transmitted to the network (see, e.g., page 8, lines 1-11), thus allowing performance analysis of how the network data traffic is handled.

According to each of Claims 13-16, the method may be executed in multiple threads.

LAW OFFICES OF
MacPherson, Kwok, Chen & Heid LLP
1762 Technology Drive, Suite 226
San Jose, CA 95110
(408)-392-9520
FAX (408)-392-9262

According to Claim 17, a self-testing method is provided to verify correct operation of the computer executing the network handling program (see, e.g., Appellant's Specification, at page 7, lines 17-35, and in Figure 5, which shows a testing configuration including workstation 502 executing a program which handles network data packets between workstations 501 and 503).

According to Claim 19, the present invention provides an apparatus for connecting an emulated electronic device to a network operating at a specified bit-rate higher than the emulated electronic device (see, e.g., Appellant's Specification at page 4, lines 18-32, and in Figure 1, showing device 30 connecting emulating device 12 to Ethernet 24). The apparatus includes a computer with (a) a network interface, which communicates with a network at a specified bit-rate (see, e.g., Appellant's Specification, at page 4, lines 29-32), (b) an emulation interface, which connects the computer to an emulated electronic device (see, e.g., Appellant's Specification, at page 4, line 32 to page 4, line 2), and a memory (see, e.g., Appellant's Specification, at page 5, lines 2-4). The computer executes a network handling program which: (a) receives data packets from the network through the network interface (see, e.g., Appellant's Specification, at page 6, lines 32-34 and in Figure 6, showing packets received by routine 58 from network interface 74); (b) stores the data packets received from the network in a first buffer in the memory (see, e.g., Appellant's Specification, at page 6, lines 32-34 and in Figure 6, showing storing packets received into shared buffer 128); (c) transmits the data packets in the first buffer to the emulated electronic device through ~~an~~ the emulation interface (see, e.g., Appellant's Specification at page 6, lines 34-36 and in Figure 6, showing routine 64 transmitting packets from stored buffer 128 to emulation interface 72); (d) receives data packets from the emulated electronic device through the emulation interface (see, e.g., Appellant's Specification at page 6, line 37 to page 7, line 2, and in Figure 6,

LAW OFFICES OF
MacPherson, Kwok, Chen & Heid LLP
1762 Technology Drive, Suite 226
San Jose, CA 95110
(408)-392-9520
FAX (408)-392-9262

showing routine 66 receiving packets from emulation interface 72); and (e) transmits the data packets received from the emulated electronic device to the network through the network interface (see, e.g., Appellant's Specification at page 7, lines 2-4, and in Figure 6, showing routines 66 and 76 transmitting packets received from emulation interface 72 to network interface 74).

According to each of Claims 20 and 21, the emulation interface may have various configurations for accommodating various design needs (see, e.g., Appellant's Specification, at page 5, lines 13-29, and in Figure 2, showing an example of emulation device 12 which can be accessed through emulator interfaces 21 and 22).

Grounds of Rejection

(a) Whether the Examiner erred in rejecting Claims 1 and 19 over each of copending patent applications 10/158,648, 10/158,772 and 10/044,217 under the judicially created doctrine of obviousness-type double patenting.

(b) Whether the Examiner erred in rejecting Claims 1 and 19 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 5,911,059 ("Profit"), in view of U.S. Patent 6,067,585 ("Hoang") and in further view of U.S. Patent 5,280,481 ("Chang").

(c) Whether the Examiner erred in rejecting Claims 2-7, 11-16 and 23-24 under 35 U.S.C. § 103(a) as being unpatentable over Profit, in view of Hoang, in further view of Chang, and in further view of U.S. Patent 6,061,767 ("Kuo").

(d) Whether the Examiner erred in rejecting Claims 8-10 under 35 U.S.C. § 103(a) as being unpatentable over Profit, in view of Hoang, in further view of Chang, in further view of Kuo, and in further view of U.S. Patent 5,383,919 ("Schwaller").

LAW OFFICES OF
MacPherson, Kwok, Chen & Heid LLP
1762 Technology Drive, Suite 226
San Jose, CA 95110
(408)-392-9520
FAX (408)-392-9262

(e) Whether the Examiner erred in rejecting Claim 21 under 35 U.S.C. § 103(a) as being unpatentable over Profit, in view of Hoang, in further view of Chang, and further in view of U.S. Patent 5,280,481 ("Aronson").

(f) Whether the Examiner erred in rejecting Claims 1-21 and 23-25 under 35 U.S.C. § 102(b) as being anticipated by "On the Design of a High-Performance ATM Bridge" (the "Chen Article").

Argument

(a) Whether the Examiner erred in rejecting Claims 1 and 19 over each of copending patent applications 10/158,648, 10/158,772 and 10/044,217 under the judicially created doctrine of obviousness-type double patenting.

The Examiner rejected Claims 1 and 19 provisionally under the judicially created doctrine of double patenting over Claim 1 of each of three copending patent applications (10/158,648, 10/158,772, and 10/044,217). However, as neither the claims in the present application, nor the claims in any of these copending applications, have been indicated to be allowable, a terminal disclaimer submitted at this time would be pre-mature. Subsequent amendment to the claims in this present application or to the claims in the copending applications may obviate such a terminal disclaimer. Thus, when the Examiner indicates allowable subject matter in this application and the co-pending patent application, Applicant will file an appropriate terminal disclaimer to overcome the Examiner's rejection, if necessary.

(b) Whether the Examiner erred in rejecting Claims 1 and 19 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 5,911,059 ("Profit"), in view of U.S. Patent 6,067,585 ("Hoang") and in further view of U.S. Patent 5,280,481 ("Chang").

LAW OFFICES OF
MacPherson, Kwok, Chen & Heid LLP
1762 Technology Drive, Suite 226
San Jose, CA 95110
(408)-392-9520
FAX (408)-392-9262

In the Final Office Action of January 3, 2005 (the "Final Office Action"), with respect to Claims 1 and 19, the Examiner states:

> **4.1** As regards independent **Claims 1 and 19** and dependent **Claim 21** the *Profit Jr.* reference discloses emulation of an electronic device **(Figure 5 and Col. 3 Lines 65-67 Col. 4 Lines 1-41)** and receiving network data packets, transmitting network data packets and receiving and transmitting data packets to and from the emulated electronic device **(Figures 6 & 7, item 102, Col. 7 Lines 14-48).** As regards the limitation of a specified bit-rate, that limitation is inherent to the an electronic device emulating a bridge.
>
> However, the *Profit Jr.* reference does not expressly disclose a network operating at a speed higher than the emulated device.
>
> The *Profit Jr.* reference discloses that there is a speed/performance problem with hardware simulators in regards to the speed at which these simulations operate **(Col. 2 Lines 36-55)**. Thus, an artisan of ordinary skill would have been motivated to search the related art to find a way to attach an emulated network device to a network in such a manner so as to allow the emulated device to perform the emulation and not be overwhelmed by the arrival and transmission of network frames that arriving at a speed greater than the emulation system can support. In the network interface controller art the *Hoang* reference discloses a method of controlling the rate at which network frames travel across different network segments and/or devices and therefore provides a way for a network to operate at a speed higher than the emulated device **(Col. 2 Lines 18-56).**
>
> Thus, it would have been obvious, to one of ordinary skill in the art, at the time the invention was made, to have combined the methods of the *Profit Jr.* reference with the methods of the *Hoang* reference because, the idea of emulating a Local Area Network transmission is well known in the art **(Chang et al. Col. 3 Lines 53-65, Col. 4 Lines 13-26),** and an artisan of ordinary skill would have known to slow down the stream of data packets from the network going into the electronic device emulation because of the speed performance problems of emulators as disclosed in the *Profit Jr.* reference **(Profit Jr. Col. 2 Lines 36-55).**

LAW OFFICES OF
MacPherson, Kwok, Chen & Heid LLP
1762 Technology Drive, Suite 226
San Jose, CA 95110
(408)-392-9520
FAX (408)-392-9262

In response, Appellant respectfully points out that, on the very teaching of Hoang that the Examiner relied for his rejection (i.e., Hoang's col. 2, lines 18-56), Hoang teaches using a 2-port bridge to handle network traffic:

> ... A current approach to attaining this objective is to use a 2-port bridge device capable of filtering data packets between different network segments or domains by making simple forward/don't forward decisions on each data packet it receives from any of the segments to which it is connected...(Hoang's col. 2, lines 22-27)

Appellant then points out that this approach contradicts the very teaching of Chang that the Examiner relied for his rejection (i.e., Chang's col. 3, lines 53-65). There, Chang teaches against using a bridge, and advocates using ISDN as a LAN transmission media:

> ... The disclosed invention presents the ISDN as a LAN transmission media to upper layer (layer 3 and above) protocols, and permits communication systems designed to operate over LAN to operate over ISDN. As a result, LAN devices can be dispersed geographically using inexpensive ISDN communications with geographic limitations of a single LAN and without the cost of bridges, routers and the associated communication links currently used to interconnect LAN segments. (emphasis added; Chang, at col. 3, lines 57-66)

Thus, Appellant points out that that the Examiner's combination of teachings in his rejection is improper, because the teachings that the Examiner relied upon for this rejection teach against each other. Combining contradictory teachings would not be undertaken by one skilled in the art. Thus, the Examiner's combination of the Hoang and Chang teachings does not render obvious Claims 1 and 19.

In the Response to Final Office Action, Appellant further points out that, if one were to follow the teachings of Hoang and Chang, depending on whether one arbitrarily gives greater weight to Hoang's teaching of a 2-port bridge, which selectively forward or don't forward packets, or to Chang's ISDN communication media without bridges, one would

LAW OFFICES OF
MacPherson, Kwok, Chen & Heid LLP
1762 Technology Drive, Suite 226
San Jose, CA 95110
(408)-392-9520
FAX (408)-392-9262

arrive at a system using either a 2-port bridge or an ISDN communication medium. Neither of these results renders obvious Appellant's Claims 1 and 19, because Appellant's Claims 1 and 19 each recite specific steps, executed by a computer connected between the network and the emulated device, which are neither disclosed nor suggested by the cited portions of the prior art references Profit, Hoang and Chang relied upon by the Examiner:

> 1. A method for connecting an emulated electronic device to a network operating at a specified bit-rate higher than the emulated electronic device, the method comprising:
>
> providing a computer having a network interface, an emulation interface and a memory, the network interface being capable of communicating with the network at the specified bit-rate;
>
> connecting the computer through the network interface with the network and through the emulation interface with the emulated electronic device; and
>
> executing in the computer a network handling program in the computer which performs:
>
> (a) receiving data packets from the network through ~~a~~ the network interface;
>
> (b) storing the data packets received from the network in a first buffer in the memory;
>
> (c) transmitting the data packets in the first buffer to the emulated electronic device through ~~an~~ the emulation interface;
>
> (d) receiving data packets from the emulated electronic device through the emulation interface; and
>
> (e) transmitting the data packets received from the emulated electronic device to the network through the network interface.

19. An apparatus for connecting an emulated electronic device to a network running at a specified bit-rate higher than the emulated electronic device, the apparatus comprising:

a computer having a memory, a network interface capable of operating at the specified bit-rate for connecting the computer to the network and an

LAW OFFICES OF
MacPherson, Kwok, Chen & Heid LLP
1762 Technology Drive, Suite 226
San Jose, CA 95110
(408)-392-9520
FAX (408)-392-9262

emulation interface for connecting the computer to the emulated electronic device; and

computer instruction executable by the computer for:

creating a first buffer in the memory;

receiving data packets from the network through the network interface;

storing data packets received from the network in the first buffer;

transmitting the data packets in the first buffer to the emulated electronic device through the emulation interface;

receiving the data packets from the emulated electronic device through the emulation interface; and

transmitting the data packets received from the emulated electronic device to the network through the network interface.

(emphasis added)

In addition, the Examiner fails to find support in the prior art references themselves to motivate the combination of teachings he advocates. For example, in the Final Office Action, after citing Profit for a long-felt need "to find a way to attach an emulated network device to a network in such a manner so as to allow the emulated device to perform the emulation and not be overwhelmed by the arrival and transmission of network frames that arriving at a speed greater than the emulation system can support," the Examiner can find no motivation in either Profit nor Hoang to combine their teachings. Instead, the Examiner cites Chang for teaching that "the idea of emulating a Local Area Network transmission is well known in the art". The Examiner, however, does not explain how, from Chang's idea of emulating a Local Area Network, one may arrive at his conclusion that "an artisan of ordinary skill would have known to slow down the stream of data packets from the network going into the electronic device emulation because of the speed performance problems of emulators." Therefore, Appellant respectfully submits

LAW OFFICES OF
MacPherson, Kwok, Chen & Heid LLP
1762 Technology Drive, Suite 226
San Jose, CA 95110
(408)-392-9520
FAX (408)-392-9262

that the Examiner failed to make out a prima facie case of obviousness. In reality, the Examiner's rejection is merely an impermissible hindsight reconstruction, using Appellant's Claims 1 and 19 as his blueprints. In contrast, Appellant has clearly demonstrated that Claims 1 and 19 are each allowable over the conflicting teachings of Profit, Hoang and Chang, whether considered individually or in any combination.

Claim 21, which was mentioned in the Examiner's comments above but was not expressly rejected in section 4 of the Final Office Action, recites:

> 21. The apparatus of Claim 19, wherein the emulation interface comprises:
>
> a bi-directional interface card; and
>
> a bi-directional interface cable.

Thus, Claim 21 recites that the emulation interface may have a configuration that accommodates a specific design need (see, e.g., Appellant's Specification, at page 5, lines 13-29, and in Figure 2, showing an example of emulation device 12 which can be accessed through emulator interfaces 21 and 22). Thus, Claim 21 is believed further allowable over the conflicting teachings of Profit, Hoang and Chang discussed above.

In the Advisory Action of April 11, 2005, the Examiner did not response in substance to Appellant's arguments, stating merely:

> The Examiner respectfully traverses Applicant's arguments and maintains the current Prior Art rejections.

Thus, the Examiner has provided no guidance as to the basis of his rejection of Appellant's claims, and thus deprives Appellant from providing a further meaningful response to the Examiner's contentions. However, as the Examiner could not refute Appellant's arguments in the Response to Final Office Action of February 24, 2005, Appellant

LAW OFFICES OF
MacPherson, Kwok, Chen & Heid LLP
1762 Technology Drive, Suite 226
San Jose, CA 95110
(408)-392-9520
FAX (408)-392-9262

respectfully submits that the Examiner erred in rejecting Claims 1, 19 and 21. These claims are allowable over the combined teachings of Profit, Hoang and Chang. Accordingly, Appellant thus requests that the Board reverse the Examiner's rejection of Claims 1, 19 and 21.

(c) Whether the Examiner erred in rejecting Claims 2-7, 11-16 and 23-24 under 35 U.S.C. § 103(a) as being unpatentable over Profit, in view of Hoang, in further view of Chang, and in further view of U.S. Patent 6,061,767 ("Kuo").

In the Final Office Action, with respect to Claims 2-7, 11-16 and 23-24, in addition to the his comments regarding Profit, Hoang and Chang discussed above, the Examiner further cites Kuo for teaching "Media Access Controller Buffer Management" at Figures 1A and 1B, col. 1, lines 14-51, col. 2, lines 16-35 and Col. 4, lines 1-7, and states:

> It would have been obvious, to one of ordinary skill in the art, at the time the invention was made to have combined the teachings of *Kuo et al.* reference because, when emulating a network device there is need to provide transmit and receive buffers in order to have an accurate emulation and to have a place to store the incoming and outgoing network frames.

In Appellant's Response to Final Office, Appellant points out that the Examiner's rejection was made despite Kuo's specific teaching against one kind of memory buffer (i.e., the FIFO buffer), at col. 1, lines 30-51. Thus, the Examiner continues his impermissible hindsight reconstruction using Appellant's claims as his blueprint and fails to make out a prima facie case of obviousness.

In any event, the Examiner's combination suffers the same defect as discussed above with respect to Claims 1 and 19 (i.e., the combination incorporates contradictory teachings of Hoang and Chang). Thus, Claims 2-7, 11-16 and 23-24 each distinguish over Profit, Hoang and Chang for the same reasons stated above with respect to Claims 1 and 19 because Kuo's

LAW OFFICES OF
MacPherson, Kwok, Chen & Heid LLP
1762 Technology Drive, Suite 226
San Jose, CA 95110
(408)-392-9520
FAX (408)-392-9262

Media Access Controller Buffer Management teachings do not cure the deficiencies of Profit, Hoang and Chang. Accordingly, Appellant submits their combined teachings neither disclose nor suggest Claims 2-7, 11-16 and 23-24, each of which depending from Claim 1.

Further, Claims 3-4 and 11-12 each recite a buffer including a receive buffer and a transmit buffer. As explained in Appellant's Specification, at page 6, lines 3-21, such a buffer allows format changes between data packets communicated between the network and the emulated device. Thus, Claim 3-4 and 11-12 further distinguish over the Examiner's combination of Profit, Hoang, Chang and Kuo.

Similarly, Claim 5 recites that the size of the buffer may be changed dynamically. As illustrated in Appellant's Specification at page 7, lines 12-16, such flexibility prevents a condition of buffer overflow. Thus Claim 5 further distinguishes over the Examiner's combination of Profit, Hoang, Chang and Kuo.

Claims 6 and 23-24 each recite alternative packet handling policies which discard data packets, as illustrated by Appellant's Specification, at page 7, lines 14-16. Such an arrangement also provides the benefit of avoiding buffer overflow. Thus, Claims 6 and 23-24 each further distinguish over the Examiner's combination of Profit, Hoang, Chang and Kuo.

Claim 7 recites keeping a record of the data packets received from the network, the data packets transmitted to the emulated electronic device, the data packets received from the emulated electronic device, and the data packets transmitted to the network. As explained in Appellant's Specification, at page 8, lines 1-11, such an arrangement allows performance analysis of how the network data traffic is handled. Thus, Claim 7 also further distinguishes over the Examiner's combination of Profit, Hoang, Chang and Kuo.

LAW OFFICES OF
MacPherson, Kwok, Chen & Heid LLP
1762 Technology Drive, Suite 226
San Jose, CA 95110
(408)-392-9520
FAX (408)-392-9262

Claims 13-16 each recite a method executing a network handling program in multiple threads. Multiple thread executions are efficient, as it provides parallelism. The Examiner's combination neither discloses nor suggests execution in multiple threads. Accordingly, Claims 13-16 each further distinguish over the Examiner's combination of Profit, Hoang, Chang and Kuo.

As mentioned above, in the Advisory Action, the Examiner did not respond in substance to Appellant's arguments.

As the Examiner failed to provide a prima facie case of obviousness and could not refute Appellant's arguments in the Response to Final Office Action, Appellant respectfully submits that Claims 2-7, 11-16 and 23-24 are allowable over the combined teachings of Profit, Hoang, Chang and Kuo. Appellant thus requests that the Board reverse the Examiner's rejection of Claims 2-7, 11-16 and 23-24.

(d) Whether the Examiner erred in rejecting Claims 8-10 under 35 U.S.C. § 103(a) as being unpatentable over Profit, in view of Hoang, in further view of Chang, in further view of Kuo, and in further view of U.S. Patent 5,383,919 ("Schwaller").

In rejecting Claims 8-10, the Examiner adopts his combination of the teachings of Profit, Hoang and Chang, as stated above for Claims 1 and 7, adding on yet an addition reference of Schwaller. The Examiner cites Schwaller for teaching "recording performance measurements of network frames." The Examiner justifies by fiat his addition of the Schwaller reference by stating "when designing an electronic device that is used to process network frames, a method of measuring network performance is required to determine if the emulated network device is performing correctly." The Examiner, however, points out neither where the prior art suggests that measuring network performance is necessary in designing an electronic device that is used to process network frames, nor how such

LAW OFFICES OF
MacPherson, Kwok, Chen & Heid LLP
1762 Technology Drive, Suite 226
San Jose, CA 95110
(408)-392-9520
FAX (408)-392-9262

measurement determines if the emulated network device performs correctly. Appellant respectfully submits that the Examiner is merely continuing his impermissible hindsight reconstruction using Appellant's Claims 8-10 as blueprints. Accordingly, the Examiner fails once again to make out a prima facie case of obviousness.

Further, because Claims 1 and 7 each distinguish over Profit, Hoang, Chang and Kuo for the reasons stated above, and because Schwaller's network performance measurement teachings do not cure the deficiencies of Profit, Hoang, Chang and Kuo, their combined teachings neither disclose nor suggest Claims 8-10, each of which depending from either claim 1 or Claim 7.

In addition to reciting Claim 7's method of keeping a record of the data packets received from the network, the data packets transmitted to the emulated electronic device, the data packets received from the emulated electronic device, and the data packets transmitted to the network, each of Claims 8-10 recite either a particular medium of recordation (Claims 8-9) or a particular statistic (Claim 10). As explained in Appellant's Specification, at page 8, lines 1-11, these features may be used for future reference and debugging. Claims 8-10 are therefore each further allowable over the combined teachings of Profits, Hoang, Chang, Kuo and Schwaller.

As mentioned above, in the Advisory Action, the Examiner did not respond in substance to Appellant's arguments.

For these reasons, Appellant respectfully requests the Board reverse the Examiner's rejection of Claims 8-10.

LAW OFFICES OF
MacPherson, Kwok, Chen & Heid LLP
1762 Technology Drive, Suite 226
San Jose, CA 95110
(408)-392-9520
FAX (408)-392-9262

(e) Whether the Examiner erred in rejecting Claim 21 under 35 U.S.C. § 103(a) as being unpatentable over Profit, in view of Hoang, in further view of Chang, and further in view of U.S. Patent 5,280,481 ("Aronson").

In this rejection, the Examiner cites Aronson for teaching "a parallel port card," and combines the teachings of Aronson with the teachings of Profit, Hoang and Chang, as discussed in the Examiner's rejection of Claim 19. However, because Claim 19 distinguishes over Profit, Hoang, and Chang for the reasons stated above, and because Aronson's parallel port card teachings do not cure the deficiencies of Profit, Hoang, and Chang, their combined teachings neither disclose nor suggest Claim 21, which depends from Claim 19.

Further, as mentioned above, Claim 21 recites that the emulation interface may have a configuration for accommodating a specific design need (see, e.g., Appellant's Specification, at page 5, lines 13-29, and in Figure 2, showing an example of emulation device 12 which can be accessed through emulator interfaces 21 and 22). Thus, Claim 21 is further allowable over the conflicting teachings of Profit, Hoang and Chang discussed above.

As mentioned above, in the Advisory Action, the Examiner did not respond in substance to Appellant's arguments.

For these reasons, Appellant respectfully requests the Board to reverse the Examiner's rejection of Claim 21.

(f) Whether the Examiner erred in rejecting Claims 1-21 and 23-25 under 35 U.S.C. § 102(b) as being anticipated by "On the Design of a High-Performance ATM Bridge" (the "Chen Article").

LAW OFFICES OF
MacPherson, Kwok, Chen & Heid LLP
1762 Technology Drive, Suite 226
San Jose, CA 95110
(408)-392-9520
FAX (408)-392-9262

The Examiner first raised this rejection based on the Chen Article in the Final Office Action. The Examiner states:

> **8.1** As regards independent **Claims 1 and 19** the *Wen-Tsuen et al.* reference discloses emulation of a bridge **(Abstract)** and bit-rate **(page 210).**
>
> **8.2** As regards dependent **Claims 2-18, 20, 21 and 23-25** see **(pages 207-213).**

In the Response to Final Office Action, Appellant points out that, contrary to the Examiner's assertion, the Abstract of the Chen's Article does not disclose "emulation of a bridge":

> This paper presents the design and implementation of a high-performance ATM bridge. The proposed ATM bridge can be used to interconnect IEEE 802.3/Ethernet, IEEE 802.3u/Fast Ethernet, and 802.11/Wireless LANs. Data traffic is filtered out or forwarded to other homogeneous LANs by a proprietary LAN emulation technology (LANE) specification. Enhanced capability including the support for emulated Fast Ethernet and Wireless LANs are provided by the proposed ATM bridge. A QoS guaranteed traffic scheduling algorithm is also proposed for the Wireless LANs.
>
> (Chen's Abstract in its entirety).

Rather, the Abstract of the Chen Article teaches using a bridge to allow one network to emulate another network. Specifically, the Abstract of the Chen Article teaches that the ATM network (i.e., the network operating with the higher bit-rate) may be used to emulate 802.3, 802.3u and 802.11 networks, which are network operating at lower bit-rates than the ATM network. Therefore, if one is to construe the Chen Article's ATM network as an emulated electronic device, as the Examiner's rejection requires, the emulated electronic device operates at a higher bit-rate than the network it emulates, which is contrary to limitations of Claims 1 and 19, which recite:

LAW OFFICES OF
MacPherson, Kwok, Chen & Heid LLP
1762 Technology Drive, Suite 226
San Jose, CA 95110
(408)-392-9520
FAX (408)-392-9262

> 1. A method for connecting an emulated electronic device to a network operating at a specified bit-rate higher than the emulated electronic device, the method comprising:
>
> providing a computer having a network interface, an emulation interface and a memory, the network interface being

capable of communicating with the network at the specified bit-rate;

connecting the computer through the network interface with the network and through the emulation interface with the emulated electronic device; and

executing in the computer a network handling program in the computer which performs:

(a) receiving data packets from the network through ~~a~~ the network interface;

(b) storing the data packets received from the network in a first buffer in the memory;

(c) transmitting the data packets in the first buffer to the emulated electronic device through ~~an~~ the emulation interface;

(d) receiving data packets from the emulated electronic device through the emulation interface; and

(e) transmitting the data packets received from the emulated electronic device to the network through the network interface.

19. An apparatus for connecting an emulated electronic device to a network running at a specified bit-rate higher than the emulated electronic device, the apparatus comprising:

a computer having a memory, a network interface capable of operating at the specified bit-rate for connecting the computer to the network and an emulation interface for connecting the computer to the emulated electronic device; and

computer instruction executable by the computer for:

creating a first buffer in the memory;

receiving data packets from the network through the network interface;

storing data packets received from the network in the first buffer;

transmitting the data packets in the first buffer to the emulated electronic device through the emulation interface;

receiving the data packets from the emulated electronic device through the emulation interface; and

LAW OFFICES OF
MacPherson, Kwok, Chen & Heid LLP
1762 Technology Drive, Suite 226
San Jose, CA 95110
(408)-392-9520
FAX (408)-392-9262

transmitting the data packets received from the emulated electronic device to the network through the network interface.

(emphasis added)

Thus, Appellant respectfully submits that the Chen Article neither discloses nor suggests either of Applicant's Claims 1 and 19. As Claims 2-18, 20-21, and 23-25 each depend from either Claim 1 or Claim 19, Claims 2-18, 20-21 and 23-25 are similarly each allowable over the Chen Article.

Further, Claims 3-4 and 11-12 each recite a buffer including a receive buffer and a transmit buffer. As explained in Appellant's Specification, at page 6, lines 3-21, such a buffer allows format changes between data packets communicated to the network and the emulated device. The limitations of Claims 3-4 and 11-12 are neither disclosed nor suggested by the Chen Article. Thus, Claim 3-4 and 11-12 further distinguish over the Chen Article.

Similarly, Claim 5 recites that the size of the buffer may be changed dynamically. As illustrated in Appellant's Specification at page 7, lines 12-16, such flexibility prevents a buffer overflow condition. The limitations of Claim 5 are neither disclosed nor suggested by the Chen Article. Thus Claim 5 further distinguishes over the Chen Article.

Claims 6 and 23-24 each recite the alternative packet handling policies that discard data packets, as illustrated by Appellant's Specification, at page 7, lines 14-16. Such an arrangement also provides the benefit of avoiding buffer overflow. The limitations of Claims 6 and 23-24 are neither disclosed nor suggested by the Chen Article. Thus, Claims 6 and 23-24 each further distinguish over the Chen Article.

LAW OFFICES OF
MacPherson, Kwok, Chen & Heid LLP
1762 Technology Drive, Suite 226
San Jose, CA 95110
(408)-392-9520
FAX (408)-392-9262

Claim 7 recites keeping a record of the data packets received from the network, the data packets transmitted to the emulated electronic device, the data packets received from the

emulated electronic device, and the data packets transmitted to the network. As explained in Appellant's Specification, at page 8, lines 1-11, such an arrangement allows performance analysis of how the network data traffic is handled. Neither the limitations of Claim 7, nor its attendant benefits, are disclosed or suggested by the Chen Article. Thus, Claim 7 also further distinguishes over the Chen Article.

In addition to reciting Claim 7's method of keeping a record of the data packets received from the network, the data packets transmitted to the emulated electronic device, the data packets received from the emulated electronic device, and the data packets transmitted to the network, each of Claims 8-10 recite either a particular medium of recordation (Claims 8-9) or a particular statistic (Claim 10). As explained in Appellant's Specification, at page 8, lines 1-11, these features may be used for future reference and debugging. Claims 8-10 are therefore each further allowable over the Chen Article.

Claims 13-16 each recite a method executing a network handling program in multiple threads. Multiple thread executions are efficient, as it provides parallelism. Multiple threads are neither disclosed nor suggested by the Chen Article. Accordingly, Claims 13-16 each further distinguish over the Chen Article.

As mentioned above, Claim 21 recites that the emulation interface may have a configuration for accommodating a specific design need (see, e.g., Appellant's Specification, at page 5, lines 13-29, and in Figure 2, showing an example of emulation device 12 which can be accessed through emulator interfaces 21 and 22). Thus, Claim 21 is further allowable over the Chen Article.

LAW OFFICES OF
MacPherson, Kwok, Chen & Heid LLP
1762 Technology Drive, Suite 226
San Jose, CA 95110
(408)-392-9520
FAX (408)-392-9262

As mentioned above, in the Advisory Action, the Examiner did not response in substance to Appellant's arguments.

For these reasons, Appellant respectfully requests the Board to reverse the Examiner's rejections of Claims 1-21 and 23-25 over the Chen Article.

Conclusion

Therefore, for the reasons set forth above, Appellant believes that all pending claims (i.e., Claims 1-21, and 23-25) are allowable over the art of record. Appellant therefore request the Board to reverse the Examiner's various rejections of Claims 1-21 and 23-25 be reversed.

If the Board of Appeal has any question regarding the above, it is respectfully requested to telephone the undersigned Attorney for Applicant at 408-392-9250.

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on May 24, 2005.

Edward C. Kwok 5/24/2005

Attorney for Applicant(s) Date of Signature

Respectfully submitted,

Edward C. Kwok
Attorney for Applicant(s)
Reg. No. 33,938

LAW OFFICES OF
MacPherson, Kwok, Chen & Heid LLP
1762 Technology Drive, Suite 226
San Jose, CA 95110
(408)-392-9520
FAX (408)-392-9262

Appendix

Appealed Claims 1-21 and 23-25 are set forth below:

1. A method for connecting an emulated electronic device to a network operating at a specified bit-rate higher than the emulated electronic device, the method comprising:

providing a computer having a network interface, an emulation interface and a memory, the network interface being capable of communicating with the network at the specified bit-rate;

connecting the computer through the network interface with the network and through the emulation interface with the emulated electronic device; and

executing in the computer a network handling program which performs:

(a) receiving data packets from the network through the network interface;

(b) storing the data packets received from the network in a first buffer in the memory;

(c) transmitting the data packets in the first buffer to the emulated electronic device through ~~an~~ the emulation interface;

(d) receiving data packets from the emulated electronic device through the emulation interface; and

(e) transmitting the data packets received from the emulated electronic device to the network through the network interface.

LAW OFFICES OF
MacPherson, Kwok, Chen & Heid LLP
1762 Technology Drive, Suite 226
San Jose, CA 95110
(408)-392-9520
FAX (408)-392-9262

2. The method of Claim 1 further comprising storing the data packets received from the emulated electronic device in a second buffer in memory and wherein the step of transmitting the data packets received from the emulated electronic device comprises retrieving the data packets from the second buffer.

3. The method of Claim 1, wherein the first buffer comprises a receive buffer and a transmit buffer, said method further comprises:

storing the data packets received from the network in the receive buffer; and

transferring the data packets stored in the receive buffer to the transmit buffer.

4. The method of Claim 2, wherein the second buffer comprises a receive buffer and a transmit buffer, said method further comprises:

storing the data packets received from the network in the receive buffer; and

transferring the data packets stored in the receive buffer to the transmit buffer.

5. The method of Claim 1, further comprising changing the size of the first buffer at run time.

6. The method of Claim 1, further comprising discarding packets of data when the first buffer is full.

7. The method of Claim 1, further comprising keeping a record of the data packets received from the network, the data packets transmitted to the emulated electronic device, the data packets received from the emulated electronic device; and the data packets transmitted to the network.

LAW OFFICES OF
MacPherson, Kwok, Chen & Heid LLP
1762 Technology Drive, Suite 226
San Jose, CA 95110
(408)-392-9520
FAX (408)-392-9262

8. The method of Claim 7, further comprising displaying the record on a screen.

9. The method of Claim 7, further comprising storing the record in a file.

10. The method of Claim 1, further comprising recording the throughput of the data packets.

11. The method of Claim 1 further comprising modifying the packets to make the packets suitable for receipt by the emulated device.

12. The method of Claim 11 wherein modifying includes removing a preamble from a data packet.

13. The method of Claim 1, wherein the receiving data packets from the network, and the storing the data packets received from the network and the transmitting the data packets in the first buffer are executed in a first thread and the receiving data packets from the emulated electronic device and the transmitting the data packets received from the emulated electronic device are executed in a second thread.

14. The method of Claim 1, wherein the receiving data packets from the network and the storing of data packets received from the network are executed in a first thread, the transmitting the data packets received in the first buffer is executed in a second thread, the receiving data packets from the emulated electronic device and the transmitting the data packets received from the emulated electronic device are executed in a third thread.

15. The method of Claim 1, wherein the receiving data packets from the network and the storing of data packets received from the network are executed in a first thread, the transmitting the data packets in the first buffer is executed in a second thread, the receiving data packets from the emulated electronic device is executed in a third thread, and the

LAW OFFICES OF
MacPherson, Kwok, Chen & Heid LLP
1762 Technology Drive, Suite 226
San Jose, CA 95110
(408)-392-9520
FAX (408)-392-9262

transmitting the data packets received from the emulated electronic device is executed in a fourth thread.

16. The method of Claim 2, wherein the receiving data packets from the network and the storing of data packets received from the network are executed in a first thread, the transmitting the data packets in the first buffer is executed in a second thread, the receiving data packets from the emulated electronic device and storing the data packets received from the emulated electronic device are executed in a third thread, and the transmitting the data packets received from the emulated electronic device is executed in a fourth thread.

17. A method as in Claim 1, further comprising, for testing the operation of the computer executing the network handling program:

generating a data packet in a second computer;

transmitting the data packet, from the second computer to the computer executing the network handling program;

transmitting back the data packet received by the computer executing the network handling program to the second computer;

comparing the data packet received by the second computer with the data packet that was sent by the computer executing the network handling program; and

reporting an error if the data packet received by the second computer does not match the data packet that was sent by the computer executing the network handling program.

18. A method as in Claim 17, wherein the step of transmitting the data packet

LAW OFFICES OF
MacPherson, Kwok, Chen & Heid LLP
1762 Technology Drive, Suite 226
San Jose, CA 95110
(408)-392-9520
FAX (408)-392-9262

comprises:

at the computer executing the network handling program, transmitting the data stored in the first buffer to a third computer;

at the third computer, transmitting back the data packet received to the computer executing the network handling program; and

at the computer executing the network handling program, transmitting the data received from the third computer to the second computer.

19. An apparatus for connecting an emulated electronic device to a network running at a specified bit-rate higher than the emulated electronic device, the apparatus comprising:

a computer having a memory, a network interface capable of operating at the specified bit-rate for connecting the computer to the network and an emulation interface for connecting the computer to the emulated electronic device; and

computer instructions executable by the computer for:

creating a first buffer in the memory;

receiving data packets from the network through the network interface;

storing data packets received from the network in the first buffer;

transmitting the data packets in the first buffer to the emulated electronic device through the emulation interface;

receiving the data packets from the emulated electronic device through

LAW OFFICES OF
MacPherson, Kwok, Chen & Heid LLP
1762 Technology Drive, Suite 226
San Jose, CA 95110
(408)-392-9520
FAX (408)-392-9262

the emulation interface; and

transmitting the data packets received from the emulated electronic device to the network through the network interface.

20. The apparatus of Claim 19 wherein the emulation interface comprises:

a parallel port card; and

a parallel port cable to connect the computer to the electronic device.

21. The apparatus of Claim 19, wherein the emulation interface comprises:

a bi-directional interface card; and

a bi-directional interface cable.

22. (Canceled)

23. The method of Claim 2, further comprising discarding data packets when the second buffer is full.

24. The method of Claim3, further comprising discarding data packets when either one of the receive buffer and the transmit buffer is full.

25. The method of Claim 4, further comprising discarding data packets when either one of the receive buffer and the transmit buffer is full.

LAW OFFICES OF
MacPherson, Kwok, Chen & Heid LLP
1762 Technology Drive, Suite 226
San Jose, CA 95110
(408)-392-9520
FAX (408)-392-9262